

H. G. Dyar. 131-157.

Catalogue of described caterpillars
Blue Book.

Descriptions begun, September, 1882.

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131-157

BB/31 = 22

Spilargis calviniae *anatural?* July 12, 1889

In one "fir tree". No caterpillars.

Head sharpened; color leaf green
a black band on each side preceded
by a yellowish shade. "Clippers" in mind.

Jaws black. Palpi whitish.

Body bright yellow green, lateral
oblique stripes (in joints 5-11) X

Last continued faintly in joint 12 to

the caudal ^{posterior} ~~lateral~~ canary yellow, ~~on~~

half velvety black. The color ~~is~~ ^{is} marked

by a fine white line. Anal plate

slightly yellow. Thence the body and

covered by small black elevated spots.

Caudal horn pale blue but as thick

covered by confluent slightly elevated

black spots as to appear black.

Thoracic feet tibiae & tarsi black.

Femora white. Abdominal feet

with two black bands separated
by a yellow shade, the feet on
joints 10 have the upper black
band only a spot and the anal
feet have only a slight black
mark. Spiracles orange color
Annulets & at posterior part of each
seg. They were not seen till the
next morning early when the larva
was "sphinxed" hard.

Rate of growth probably 2

BB132

Agraulis vanillae on passion flower
at Los Angeles Cal. Aug 2, 1889. (All sizes)
Egg $1\frac{1}{2}$ mm high, 1 mm in diam, flat at
base, nearly cylindrical but slightly
greater diameter in the middle, summit
rounded. Sides striated by about 15 long-
itudinal ribs crossed transversely by
many slight parallel creases, the summit
reticulated. Color pale yellow, uniform
As hatching approaches the color of the
larva is seen as a red band.

Newly hatched larva (Aug 4) Length 2.5 mm
Head nearly round, black & shining + hairy
Body much contracted between the
segments, pale yellowish testaceous
1 per seg. except joint 13 which has 2
Longitudinal rows of black spines
fine & appearing slightly clubbed. The
sac feet dark. Eat the egg shells
On joints 3, 4, 6, 8, 10 are large whitish
subdorsal spots & the cervical spot is
edged with white. ^{subd. band} ^{greenish}

As hatching? done.

has 2 long black spines ^{beset with bristles}

[Mature larva has much variation. Head, pale whitish orange with black bands 3 proceeding from each spine, 1 before, 1 on the eye & 1 toward the body. While below on the side of the head is a narrow ^{bands sometimes brown} band. On each joint are 6 spines ⁵⁻¹² beset with bristles but on joints 2-4 there is a different arrangement. On joint 2 one 2 spine in the ^{space} ~~supra~~stigmatal. On 3 one 4 2 anteriorly, subdorsal & 2 post. ^{stig. space} ~~supra~~stigmatal. Joint 4 has 2 subdorsal. Joint 13 has ^{the upper pair anteriorly} 4, the middle one being gone. Spin black. Body orange, with a dorsal band of blue slate color or purple and ^{lateral} broad ^(occupies the stig. sp & subd. line) subdorsal band, these varying in width. The orange appears in spots below the middle row of spines. A subventral white band of varying width, sometimes obsolete. Spines black. Venter slate color shaded

with black, orange spots represent in the feet on joints 5, 6 & 11, 12.

Feet dull orange inwardly, black outwardly. Small white spot above the bases of the legs. Length about 35 mm.]

After 1st moult (Aug 8) Head & spines with their elevated bases shining black. Spines as in mature larva. Head furnished with black bristles. Cervical spot represented by 2 complement black spots with bristles. Body pale orange, subdorsal band paler and greenish. Feet black outwardly ^{with fine}

[Chrysalis. suspended by the tail. Abd. furnished dorsally with slight elevation each preceded by an oblique black spot. Thorax posteriorly deeply excavate dorsally, anteriorly rounded in a wedge shaped protuberance which is cut perpendicularly in front. Top

of head flat with some jointed pro-
trusions before the eyes. An angular
projection at base of wing cases and
the thorax ventrally at apex of
wing cases is much bulging, sharply
rounded and meeting the abdomen
almost at right angles. Color
ash gray & white much variegated,
the white appearing most distinctly
as a ventral band, stigmatal &
dorsal line on abdomen and on
the int. marg. of wing cases & on
top of dorsal process of thorax.

The depression of the thorax is shaded
with black as also the top of head
& some regular black lines occur
on the wing cases. [Duration 14 days]
After 2nd moult (Aug 11) As in the preceding
stage except the lateral purplish band
is present, covering the stigmatal

space and a subdorsal line. Cervical
spot represented by 2 redward black
spots with short spines. ^{Head} spiracles, anal
plate & outside of feet black. The
body is bright orange as in the mature
larva & the spines are the same
After 3rd moult (Aug 14) Markings, 2
mature larva (red spots not black,
no white stripe.)
Length about 25 mm.

After 4th moult (Aug 18) Mature

BB/33

also willow

Spring of a kind of poplar in
granite valley, Aug 15, 1889.

Head ^{sub-triangular} pointed, obtusely pointed at
vertex, shagreened. Color green, a yellow
strip from vertex to palpi. "claspers"
tinged with pinkish ^{dark black}. Body light
yellowish green, thickly covered
by small white spots, less numerous
on joint 13. A pale white subdorsal
line runs from the middle of joint 2
to joint 11, fading out at both ends.
Lateral oblique yellowish line
just before the spiracles, more
distinct posteriorly, on joints
10, 11 & 12 is a very distinct one, white
edged above by darker green
and continued to the caudal
horn which is pale whitish,
violet beneath at the base and

light blue above. Anal plates
tinged with yellowish at the
edges. Spiracles white with a
distinct brown oval edging.
Thoracic feet tinged with pinkish.

Length about 30 mm

"J" Aug 20 in the ground.

Pupa Dark mahogany red with
black shadings, cylindrical, and
parts markedly developed. Ac-
mester contracted basally & tipped
by a tapering spine.

dead

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Springs on evening primrose in
Yosemite valley Aug. 15, 1899.
Head & cervical spot, ^{16 small plates} shiny olive
green, covered by small yellowish
spots. Palpi & mouth parts pale.
Body yellowish green, a yellow
subdorsal line partly interrupted
on each joint from 4 to 12 by an
rounded dark red spot. Above &
below each spot is a distinct black
spot, the upper ones in some species
continued & connected to form a
band. This is sprinkled with
yellow ^{dots} posteriorly to each red
spot. Sprinkles ^{light} pale red with a
yellowish line down the center &
surrounded by black mottlings -
caudal horn reddish orange
with elevated pale points

341213

Feet & venter greenish yellow
with some black streaks in the
subventral space
Length about 65 mm

Similar mottlings on joints 3 & 4
in the stigmatal line and on
12 & 13 in the subdorsal space

Deilephila lineata

135-

Egg of *Luminatus lorquini*? on willow
at Yosemite Aug 17, 1889. Laid on the top
of the leaf. Nearly spherical, contracted
toward the flattened base, closely
covered with ^{rounded} depressions & minutely
pilose. Color blackish (towards hatching)
After 2nd moult?? Head rough, slight
vertical processes, dark brown, some of
the roughnesses tipped with white.
Body much roughened with many
small processes, the largest being
dorsally on joints 2, 3, 4, 11, 12 & 13, on
joint 13 are 2 pairs. The processes are
also much roughened. Color
dark brown a large white patch
dorsally on 8 seg & the tops of some
of the roughnesses before & after the
white. Others tipped with yellowish
anteriorly dorsally & posteriorly

234 11-13

Laterally (joints 12 & 13)
dead

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See 311

Rhaphia? on Poplar Yosemite Aug 17, 39
 Head whitish green, partly ventral
 skin of joint 2. Body pale green
 with 2 transverse rows of small
 yellow dots on each segment
 the dots alternating, on joint 4 the
 posterior row are more closely set
 Joint 3 has a double dorsal process
 violet colored, edged by yellow and
 finely marked with black. On 5-
 9 & 12 are 2 spots similarly colored
 & connected posteriorly by a yellow
 line. A stigmatal row of small
 spots of same color, except on joint
 5. On 2, 3, & 4 the spots are elevated
 Feet of joint 13 with same color.
 Length 30 mm.

Dead

R. frater var. *coloradensis*.

Copied
12/2/90
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3 *Edemasia* on rock maple Yosemite
valley Cal. Aug 20, 1889. Head black
with a few short hairs. Cervical spot
bisected, black as are also the
anal plates. Body yellow with short
pale hairs; joint 5 has a slight
dorsal hump, palmar white orange
tinged & with 4 black elevated
spots, these being part of a transverse
row of 8 which each segment bears
joint 13 having a double row.
The rows are not in line, the 2
dorsal spots being placed anterior-
ly to the others. Faintly indi-
cated geminate subdorsal &
lateral brown lines. Thoracic
feet dark. Length 12 mm.

R Moults Aug 20 Head mahogany and
more or less shaded with black.

Lowie Keene Valley 27. July 12 1894
Stage I hds .5 mm. II 1.1 mm. tubercles with
large conical bases but no secondary ones
Furnished with short hairs. Jaws black

Body yellow, a dorsal single &
subdorsal & lateral geminate
interrupted pale brown lines
Black spots as in previous stage
but more elevated, the dorsal
on the hump & on joints 3 & 4 the
subdorsal especially long.

There is also a slight hump on
joint 12 with 2 produced spots
(spots in 4 rows 1 most dorsal line ② in
subdorsal 1. ③ in lateral line ④ in
subventral space) these last are
on each joint
fluent by 2 more below them.
The tubercles are obsolete beyond joint 11

& the arrangement of spots confused
Bisected, ^{elevated} cervical spot, feet & anal
plates black. Body with short hairs
Venter pinkish between the legs
Anal feet elevated. Later as the

same grows the geminate from him.
 become filled in with white and
 the hump on 5 has a decided rose
 tint, a ^{slender} ~~fine~~ brown interrupted
 line appearing between the dorsal
 & subd. lines & bet. the subd. & lateral
 lines. Molt Aug 31 as before but
 black spots prolonged as blunt
 spaces on joints 3 of the ~~subdorsal~~
 line are long, on 5 the subd. ^{next dorsal} ~~subdorsal~~
 & the rest the ^{next dorsal} ~~subdorsal~~ are longer.
 hump on 5 rose color, on 12, yellow.
 Lines black, three crenate lateral
 & ant dorsal white ^(in center) between, inter-
 rupted at humps. ^(obsolete on 13) Anal feet yellow,
 black at base (red elevated), dorsal
 line black ⁶⁻¹², bet. it & subd. interrupted
 fine line & another darker brown one
 bet subd & lat. (dead)

(Probably last molt)

Odontaspia salicis

Corresponds
 well with
 ?? Hy. Edw.
 Desc.

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Notonid larva, Los Angeles Cal,
 Sept 22, 1889. Dark brown above, a black
 dorsal stripe edged interm. with
 with pale yellow. Subdorsal inter-
 trich yellowish streaks, and the
 sides shaded with black. Sub-
 ventral space pale yellowish
 shaded with brown centrally, with
 a stigmatal & subventral whitish
 line. Venter pale whitish with
 2 white lines interrupted by the
 feet. On each joint 2 black stigmatal
 spots in 2 alternating rows. Cervical
 spot large & black. Head pale
 reddish brown. Sprouts black.
 a number of short pale hair over
 the head & body. Anal plate
 pale. (Dead)

Rate of growth perhaps $1\frac{14}{5}$
 would give 2, 3 $\frac{3}{5}$, 7, 12 $\frac{3}{5}$, 22 $\frac{1}{2}$, 40 $\frac{1}{2}$
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Egg laid by *Arctia docta*, Sept 20
 1895. Los Angeles C. light.

Egg. Shape of a ^{round} ~~large~~ tack. Flat at
 base, conical but rounded over.
 color pearly white, smooth
 and shiny. Laid in a mass.

Hatched Sept 28 Before hatching the ^{orange} ~~orange~~
 color band is seen at summit and
 black hair apically around leg
 Larva pale whitish with ⁶ ~~8~~ spots per
 seg blackish, producing some white
 black hair. Head ^{of} central spot

transparent face orange. ^{eyes black} ~~eyes black~~
 antennae 2 more

Imm 2 Oct 1 Head between eyes
 jaws brown. Body pale " with 8 long
 narrow large blackish spots
 black hairs. Length 4 mm - 6 mm

Imm 3 Oct 4 Head between eyes
 jaws and 2 large spots on the body

On the 10th inst. (5, 6, 11, 12) the
 small black spots per seg. ~~on the 10th inst.~~

blackish hairy. Body between
 brown nearly black with a pale
 whitish ^{central} ~~central~~ band. The ^{whole} ~~whole~~
 pedicel short black hairs
 faintly ^{of} ~~of~~ spots on ^{the} ~~the~~
 whole ^{of} ~~of~~ the whole ^{of} ~~of~~

Imm 4 Oct 2 Head black
 jaws brown. Body ^{of} ~~of~~ ^{of} ~~of~~
 brown. Head ^{of} ~~of~~ ^{of} ~~of~~
 brown. Head ^{of} ~~of~~ ^{of} ~~of~~
 brown. Head ^{of} ~~of~~ ^{of} ~~of~~

On 5-12 inst. some most dorsal ^{of} ~~of~~
 The ^{of} ~~of~~ ^{of} ~~of~~ ^{of} ~~of~~
^{of} ~~of~~ ^{of} ~~of~~ ^{of} ~~of~~
^{of} ~~of~~ ^{of} ~~of~~ ^{of} ~~of~~

Imm 5 Oct 3 Head black
 jaws brown. Body ^{of} ~~of~~ ^{of} ~~of~~
 brown. Head ^{of} ~~of~~ ^{of} ~~of~~
 brown. Head ^{of} ~~of~~ ^{of} ~~of~~
 brown. Head ^{of} ~~of~~ ^{of} ~~of~~

Rate of growth 2

Speed 140

30/10/1979

Egg of *Pyrausta* caryet on *Quercus*
Apr 22, 1889 at Los Angeles, Cal.
Egg. Laid on upper surface of leaf.

Base flattened, nearly cylindrical and thicker in the middle the top quite flat & rather abruptly rounded.

Longitudinal ribs ^{slightly beaded} ~~across the~~
surface. Color green of a slight

thinner than the leaves. Length ^{max}

Sept 25
Hatched larva. Apparently (5) 2 weeks 2 mm
on dark line distinct

no double line distinct
No 2 at Sept 29 apparently = a, Length 4 mm

Mon 3. Oct 3' = (a) Moist Oct 6' Head slightly
undate, orange black, with minute yellow
speckles & black hairs, Body purplish black
Shine black.

with small yellow spots. A geminate
broad yellow line irregular & interrupted
and a series of ^{supra & sub.} stigmatal irregular spots.

Nov 5 Oct 10 Head brown, black with elevated spots
2 lines, body black spots orange ~~ventral~~ and ~~mouth~~
all dark. Jaws a slight white and brown
underneath. P. large?

3. Change of 5 km in the
 4. In the 3rd and 4th
 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 8

Put together Spin a web on surface of leaf and eat beneath its upper surface of leaf.

Length 2mm Head, cervical spot, anal
spots, alternating row of ^{8?} black dots

Body dark yellowish testaceous.

head with 9 processes, another 2 long
Pearse

Immature Head black covered with
gray white hairs and on the vertex

Adult 6 orange elevated spots bearing
black hairs. ^{dull greenish} Body yellowish black to

anottled, varying in intensity of shade
with many yellow or orange spots ^{when}

forming irregular subdorsal, 2 lateral
anterior sub-stigmatal bands more

or less distinct. Spine white with
white bristles tipped by a black band.

4. three 2 ant. segs. black. 7 per seg.
on 5-12 (dorsal, subd. dent, sub-vent)

none on j2, 3 & 4 have 4, 13 & 2

(Ov dorsum & sides nearly all black with the orange spots. Spines black. Venter greenish with some black marks.)

Body covered by many small papillae
producing a bumpy white mass

Venter greenish, mottled with

Black or brown length about 30 mm

(*) June 15, 1891 Head black, gray body
darkish.

the flesh faintly mottled with yellow.

laterally and a geminate dorsal

yellowish ¹¹purple. Short spine bearing

Black hair arranged as in nature

Larva, black, with a dorsal cord

on joints 6, 8, 10 yellow Length 7mm

4928 Black & spines black except ^{desol}

6. 10⁰ which are vacq. at base cyclon

in center & black at ends. A stem with

no center & black at ends. A slight red
to dorsal yellow line faint.

juvenile dorsal yellow line. Minute
black spots on sides of head.

yellow spots on the body. White & black hair

Sept 15 Mon

Minor Vets all black. Substing lines

yellow, minute yellow spots. Vexure.

White hairs & leaves reddish. P. carden

(Pupa depressed behind thorax the
 taking anterop. in a ridge
 thoracic process short & pointed)

my cox is prominent; abdominal
orgs. small & quickly removed,

Ctenaster flatterid & *hookeri* & a

button & white ribbs. A pointed

operation at each eye and the

base of the ring cases, 3 rows of

Oral pointed elevation, touched

1 on abd with 2 points a third
with white, with 2 large & 2 small

White spots in depression behind throat

Color? Inside wood brown. Interior

can / large wood born humul
moulded with whitish) P. Carro

~~Language~~
development stages

Врач: серж

11

cardini

141

Heaperid larva on Malva, Sept 22nd 1899
 at Los Angeles, Cal. Head much
 larger than joint 2, slightly notched
 at vertex, minutely chagreened.
 Head & joint 2 black with
 a few short white hairs. Thoracic
 joint black. Body ^{last seg. tapering} pale green
 a faint geminate pale dorsal
 and stig. lines, a darker dorsal
 line. Body densely covered with
 granulate white ^{filiform} granulation.
 Abd feet green. Length 15 mm
 (dead)

142

 cph
 Oct 31

Eggs laid by some c-light moth
 Sept 23rd 1899. Hatched Sept 25 and
 were given Malva. Hemispherical
 rounded toward ^{at} the base the vertex
 with a rounded depression. Finely
 creased vertically. Pale yellow.
 Hatched Malva as before & will not
 run readily upon a thread. Head
 somewhat conical black & shiny
 central spot & thoracic legs faintly
 blackish. Body pale yellow with
 black hairs. Eat the under leaf
 & the leaf & not there on the ped.
 keep the body bent up in a closed
 loop & head touching the leaf.
 In walking have the last 3 pair legs
 a Mon 2 Sept 28 Head whitish. Body
 green with a trans. row of black
 spots per seg. bearing black hairs
 Head 12 legs 6 thoracic & last 3 pair

a subdorsal & stigmatal whitish line
joint 12 enlarged. When about to
moult cut out straight or leaf

Moult 3 Oct 1 Head greenish with
minute black dots & black hairs ^{faint reddish}
Body green with white ^{heavy black center} pale spots
and indistinct longitudinal white

streaks, a narrow subdorsal and
broader stigmatal white lines
On joint 5, 6, 7 is a distinct black
spot in the subdorsal space. Body
with black hairs. ^{abd.} Legs only on 9, 10
and 13. Plumped. Length about 7 mm

Moult 4 Oct 4 Head green with minute
brown speckles and a few black hairs
Eyes & jaws brown also palpi. Legs as
before. Body green, a broad white
stigmatal line, a narrow subdorsal
and two more in subdorsal space also
white, the ^{first broader than the 3rd and the} latter slightly wavy and

interrupted. On each joint 2 rows of
white dots with black centers bearing
short black hairs. The rows alternate
on the middle joints. Thoracic feet
tinged with blackish. Other coxae
white. Length about 10 mm. When
disturbed curl spirally & fall to ground.
At this moult eat whole leaf.

Moult 6 Oct 7 Head ^{shiny} green, jaws brown,
palpi black. In some a black stripe
on side of head. Body dark green.
The lines as before, the stigmatal
ending sharply above but blended
ventrally. The elevated spots bearing
^{white} black hairs are whitish except those
suprastigmatal which still have
black centers. Cervical spots and
anal plates dull pale green
Thoracic feet blackish. Length 25 mm
The stigmatal spots and centers

have some minute white spots and
on j's 5 to 10 there is a small black
dorsal spot situated anteriorly on
each segment. Joint 12 slightly swollen.
Joint 13 small. Legs as before ^(abdomen 9, 11 & 13)

Oct 11 Spun a thin white web, drawing
together leaves (or the netting) in which to pupa.
Pupa Oct 13. Deformed somewhat above
the wing cases at back of thorax, the
eyes prominent, the tongue case
projecting below the wing cases forming
a rounded prominence over the abd.
seg. succeeding the wing cases. The cu-
mulus is short & blunt and the hooks
with which it is furnished are fastened
in the silk of the cocoon. Wing cases
slightly creased. Color brownish
black but paler at the joinings
of the parts and between the abd.
joints. Imago Oct 25

Plusia californica

Rate of growth $\frac{13}{4}$
(see cat no 3934) 143

Copied
March 1917

Eggs laid by larvae Sept 25, 1889
Los Angeles Cal, electric light.
Eggs Sept 25. Slightly less than hemispher-
ical, the base flat. Color dull brown-
black, smooth. Diameter 1 mm

Hatchling Oct 3 Head ^{dark} reddish brown. On
joint 2 are two brown processes
minutely spined. Joint 13 has two
tails 3rd joint brown twice annulate
with pale yellow ^{minutely spined} body brown with
^{2-6, 8-10, 12.} 3 dorsal pale yellow patches. Venter
and legs pale whitish. Length 4 mm ^(total)

Rest on leaf on abd feet, the thorax lifted
up. Tail together, resting on leaf.

Nov 2 Oct 6. Spin web again on leaf etc.
Head reddish brown with two ^{which is swollen} processes on joint 2
minutely spined. Tails twice dorsally
annulate with pale yellow. Body

red brown transverse row of minute
spined joints to each seg. the dorsal
pattles are in previous stage but the faint
one on joint 12 ^{extends also} on j. 11 ^{length}
Length (6 ^{mm} + 4 ^{mm}). Eat the whole leaf.

Enter 1 leg, pale. The other
side threads in the tails are pale
whitish at base the rest dark brown
once, annulate with white. They
are extended in the same manner
as a definite "horn", 'inside out'.

Nov 31 Oct 11 Head brown, densely marked
with small yellow spots but leaving two
narrow lines of the ground color in front
darker whitish. Head paler at the sides
posteriorly. Joint 2 is somewhat swollen
& bears the thick warts about 1 mm long
covered with ^{tubercles}. Each segment has
a row of smaller tubercles bearing a
fine hair. Tails 4 ^{mm} long & spread.
The tubercles dorsal on joints 3, 6, 7, 8, 9 & 11 have each larger

Body yellowish green, the red brown of
the dorsum reduced to a ant dorsal
brown line which goes on the last
segment and is connected on joints

2, 3 by brown mottlings between the
processes, by a large patch on joints
6, 7 & 8 and another on joint 11.

The large spot is paler centrally.
The tails are green, brown above at
the base and twice annulate
with brown toward the ends. Length 3 ^{mm}

On the ant dorsal line may be
wanting and the brown dorsal
patches isolated. These are in
intense somewhat in different examples.

Nov 17 Oct 17 Head purple brown before
yellow green at the sides behind the
eyes, the upper $\frac{2}{3}$ densely covered with
small pale yellow spots, but leaving
two lines of the ground color in front

Palpi white. A few minute hairs on the surface. Body green with a yellow tinge at the bordering of the dorsal patches which are four in number and purple brown. The 1st on joints 2 & 3, triangular, covering the upper part of the spined process of joint 2, partly divided by a green dorsal line anteriorly; the 2nd on 5, 6, 7 & 8, ^{extending down the sides to the apex} elliptical, pointed anteriorly and connected posteriorly with the 3rd patch on joints 10 & 11 which widens posteriorly and narrows abruptly to the 4th patch on joints 12 & 13 which is partly replaced ^{so both these extend to and dorsad} by the green color. Tails purple brown at the basal half above and truncate with brown at the extremities. The dorsal patches are partly mottled with pale yellow and contain conical tubercles, each

Head partly retracted under joint 2, surmounted by a short hair. The sides of the body are sprinkled with brown & white spots and have a few short fine white hairs. The tails are spined and the retractile threads black with a white ring. Body slightly elevated locally at joint 4. Mount Oct 23 Similar 5-d line less, later gone. Mount Oct 30 - Oct 31 Mount Oct 24 Head as before. Body much smoother, the conical piliferous elevations represented by ^{brown} slightly elevated spots. Process on joint 2 ^{much} reduced. Tails ^{very} slender and without spines. All spined as before & marked the same. Dorsal patches much as before, the 2nd 3rd & 4th strongly ^{2nd 3rd 4th more so} marked, the former marked centrally with many dark crimson spots. *

Rate of growth $1\frac{1}{2}$
C. 144

meal
dove
repelga
2.1.10

43 eggs laid on electric light carbon
Hill & 127 St. Los Angeles, Cal. Found
Oct. 26, '89. Egg spheroidal, the base
slightly more flattened than the
apex. Color ^{light} pearly ^{gray} ~~white~~, when
found showing a gray shade from
the included larva. Laid in

mass. Diam. about 1 mm.
[A♀ *Drachm. picta* laid 380 eggs
Oct. 28, 1894. Hatched Nov 14 (28 NOV)]

Hatched Nov 14 Head in the center and
larva eats a hole ^{afterward eat from the shell} for exit. Head
on date, black & shiny, the mouth
parts pale. A few black hairs.
Cervical spot straight in front, curved
behind, black & shiny. Body pale
dirty whitish with long black hairs
growing from 8 ^{shiny black} ~~long~~ ^{black} ~~hairs~~ ^{hairs} legs
black. Length 2 mm when hatched.
Should be 2 1/2 by scale

M.B. *Adacta* will run & hide when disturbed
while *picta* ball up. Easiest way to
distinguish the larvae.

Later the body is greenish white, the
warts black. ① now small in subdorsal
space. ② subdorsal ③ lateral ④ anty-
matal ^{subventral} ⑤ obsolete on 2, 3, 4 & 13 ⑥ replaced
by cervical spot on 2 and supplemented
by a elongated spot on 13. ⑦ on 2, 3 & 4 lower than ⑤
most of the others are lacking. Some of
the warts are brownish at the base,
and subventral
forming a subdorsal brown band on the
middle segments. Legs black.

Mount Br 12 Head as before. Body
pale whitish, the warts large and
black with brown irregular spots
the subdorsal ^{subventral} rows. Length of larva 4
Thorax & legs black. Abdominal whitish.
Hair black, about 1 mm long, still present.
Mount Br 20 Head shiny black. Body
& warts black, a white dorsal line
and pale stigmatal band. Hairs
black, white from subventral warts.
Eat whole leaf. Length 6 mm.

At completion of stage body is purple
with dorsal & interrupted stigmatal yellow
ish white line wants ① small, anteroch,
in 2-d. of acc 5-12 ② subdorsal ③ super-
stigmatal both replaced on j 2 by cervical
spot, ④ sub. stig ⑤ & ⑥ coalesced on j 13
⑦ & ⑧ subventral, only one row ^{intermediate} on 2, 3 & 4
and lower slight on 13 ④ small units
on venter in the legless segments

mouth ~~for~~ 27 Head condate, black & shiny
with a few short black hairs. a
pale line above the mouth, conspicuous
with base of palps. Body & warts
black, a narrow dull whitish dorsal
line. Hair bristly & black, palps from
the subventral warts. Feet & legs
black, claspers of abdominal palps.
Length ⁹ 10 mm after moult.

Nov 6 Dec 4 head as before. body black.
anal line whitish. narrow and faint.

Very rusty, black, but mixed
 with brown, especially from the
 ventral side. Length ~~15~~ 13
 10. Head ~~black~~ black, black
 shining the sides of the head slightly lighter
 than the rest. The eyes are black.
 Black with a line ^(see 15 L. 27 mm)
 Hair black, very soft. L. 15 mm
 (see 15 L. 27 mm) [Call 220]

moult 7-19 Head as before, but on the
 vertex posteriorly a darker patch. Cervical
 patch dark shiny, bristled, body black
 a more trace of dorsal line as far as eye.
 Hair black mixed with brown, abd feet
 whitish length 35 mm. Tarsus brownish [20]
 light and short. Ventrals dark, white
 vent 8-12 Head pale brown, largely
 shaded with black in front, triangular
 plate ^{main} ^{dark} at mouth, & pale ^{dull} light
 uniform the posterior covered with black
 of dots all black.

copied
Apr 23 90
copied
Dec 18 90

145

Spring dromed in irregularly dotted
Phoenix, Arizona, Nov 15, 1889. Probably
on ^{cottonwood} ~~pepper~~. Head subtriangular
green with many rather large white
irregular spots, the front nearly
all ^{pale} yellowish white but it
has a purplish shade centrally
at the antures and the ^{triangular} triangular
plate above the mouth is pale green
mouth part ^{dusky} white but the jaws
black on the inside. Cervical spot
and anal plate same as circles of
the head, the two ^{lateral} lower plates tinged
with yellowish posteriorly. The
upper does not quite reach the
^{lateral} lower ones at the sides, leaving
some of the skin of the body between.
Body green with a purplish shade
on the dorsum (supratarsal) and 7

^{interrupted} between the segments
oblique lateral lines, the first
and sixth fainter than the
others and sometimes almost
obsolete. The last is broad
and distinct and extends
from above base of leg on joint 10
to the caudal horn which is short
concolorous with it, ^{in many the up. plate} greenish white.
The lines are not well defined
at their edges, the outline being
somewhat irregular and blended.
Spinacles yellow brown, the central
one on joint 2 is all white.
Thoracic feet white,
purplish at the tips with fine
brown hair internally; abdominal
green, purple externally above
the clasper, then gradually whitish
and above this another slight
purple shade. Venter centrally
slightly & interruptedly paler.

Each segment has about six
transverse creases or annulets.
Length of larva 80-90 mm. Length
horn 3-4 mm. Width of head at
base nearly 7 mm, height 8 mm.
Diameter of body 15-18 mm.

Pupa Red brown. Robust, of usual
shape. Cremaster short and rounded
terminating gradually in a single point.
Body segs. coarsely punctured, wing
cases granulated.

Imago Jan 12, '90. Cat no 4508

Triptogon occidentalis
var. *f. modesta*.

Triptogon imperator, Stt.

146

Minor larva on ^{cottonwood} ~~poplar~~ Phoenix
Arizona, Nov 15, 1889. Spin together
closely their surfaces touching the
leaves & poplar & "punks" inside.
Head pale whitish, greenish in
front with two black spots on
each side. Jaws brown. Body
slender. Last two segments tapering
whitish green with a few short
pale hairs. Thoracic feet tipped
with black. Cervical spot large
& green, covering the whole of the
top of joint 2. (Very numerous at
Phoenix with a black spot below
it. Spin a little white silk web woven
between the leaves and turn to light
brown pupa; abd segs. tapering, last round
with no cremaster. Segs very slightly
sparsely punctured & wing cases creased.

147 *Phasianus versicolor*

Collyerwood

148

Hyphantornis on ^{cottonwood} ~~frigate~~, Phoenix Arizona

Nov 19, '89. Spin web as H. curvica.
Cervical spot black.

Bone last moult? Head ~~red~~ black. Body

dark gray, with dorsal & subdorsal
yellowish subventral
white stripe ~~on~~ ^{on} ~~the~~ ^{of} ~~the~~ ^{the} ~~venter~~ ^{venter}

white stripe, ~~original~~ stripe fainter
and broad at the sides, paler than in

more mottled with yellowish white
subventral spaces, warts reddish or black

Larva white & green. Legs black 18 mm

Mouth Use of Head string recommended.

a black band is given above the
mouth and a line on the snout.

mouth while in the over the mouth
a few short hairs in the lower part
and the bases of the palps are white.

Body black, slightly mottled with

yellowish, more at the sides. gray

in grey appearance. Dorsal, subdorsal
(in subventral space)

and subventral lines pale yellow
the latter wavy
and interrupted. Ventrals @ a small

very interrupted, waste of a small
now near dorsal line situated with

early joint 5-12, ② row above advanced

Copied
6/5/90

149

On willow in arroyo Salt River Phoenix
Arizona Nov 28, 1889. Larva pinkish, all
last stage thirteen Body flattened
wider than ^{high} tapering only very slightly
to the extremities. Head small, pale
testaceous with brownish marks at the
sides and the eyes black, whitish above
the mouth. Body pinkish, an inter-
rupted dorsal and wavy subdorsal
line, a dissected dark cervical spot
and brown shades on 5, 6, 7, 10 posteriorly
11, 12 & 13 ant. fused to s-d line and
partly connected with the dorsal. ^{slight shades on} 8, 9

Body has 3 rows of piliferous warts ① in
s-d space ② below s-d line 3 substigmatal
③ ④ are brownish & bear short hairs
white ⑤ is orange & bears long ^{whitish} hairs
Spines, black. Subventral space pink
Venter whitish and smooth. L. 10 mm

line ③ superstigmatal row ④ sub-
stigmatal, both obsolete on 13 ⑤
and ⑥ subventral rows, only one row
on joints 2-4 and 13. Warts dark
orange, hairs long thin, white
and brownish, ~~stigmatal~~ ^{some} 10 mm
Venter black, without warts, space
white. Anterior portion of joint 2 is
bordered with orange. Length 30 mm
On joint 13, ③ ⑤ & ⑥ are coalesced in one large
spot ⑤ is present and ⑥ slight on 12 & 13
No web spin a web at this stage

Nov 29 Web between leaves with the
hairs of larva. Web rather thin.
Pupa mahogany red. Resembles *H. cunea*
Ald. contracted at end of wing cases &
thence rounding to cremaster which is
flat transversely with 2 rows of 6 or 8 hooks
Ald eggs minutely punctured, wing cases
creased. Imago Nov 90 *H. cunea*

① The larva has only 14 feet, the pair in joint
very gone (taken 23, 4, 8, 9, 10, 13)

Young Head whitish with a few brown
and 2 large black spots. Body
pale greenish white marked as
in previous desc. but markings are darker
and there are irregularly shaped pale
brown spots as brown joints 3 & 4. Cervical
spot pale. Vents concolorous with markings
in which they are situated, brown now
pale whitish. Hair pale. L. 6 mm
cocoon elliptical ^{not strong white & opaque} 3 cells & a few bits of wood
extending 8 mm x 3 mm Pupa light
brown, pilose, abd. segs tapering
the last rounded. In overmaster
Insects Dec 23 (Cat. no. 4343-4)

Viola hederifolia, str.

150

Looper on willows Anroy Salt river
Phoenix A.T. Nov 29, '89 Head white
with slight brown marks the most dis-
tinct being a transverse ^{interrupted} band above
the middle of head. Eyes brown, jaws
brownish. A few short fine hairs
Body has the skin somewhat
wrinkled especially at the sides
and is nearly uniform dirty
white, a few fine short blackish
hairs being distinguishable with
a lens. Length 25 mm
Entered ground Dec 6 and spun slight
web. (Determined myself)

insects on willows Anzo Salt River Phoenix
A.T. Nov 27, 1889. Head semitransparent
pale yellowish white, jaws brown, eyes
black. Cervical spot covering the whole
of joint 2 above the spiracles, encloses
with head but white anteriorly
joint 2, brown below it. Body greenish
white with a geminate dorsal,
subdorsal, stigmatal & subventral
powdery brown lines, the stig.
most distinct and the subventral
and more interrupted. Lines
nearly obsolete on joint 13. Body
has a distinct substigmatal fold
and a few fine short white hairs
Length 12 mm. Spins together the leaves

Eacles imperialis on live oak, Melbourne
Indian River, Fla. Dec. 19, 1889. Head brownish
testaceous shading pale on the lower half.
Two brown ^{black} marks in front on each side
^{interrupted at base of triangular plate}
of the central suture, diverging basally,
a similar wider line on side of head
crossing the eyes. A few short white hairs
Cervical spot pale testaceous with 4 gran-
ulated short processes on ant. edge, and
long. Anal plates ochre yellow, strongly
granulated & elevated at the edges
the upper brown centrally, the lower
black except the granulation. Body
furnished with many granulated
processes resembling short horns of a
dark ochre yellow color in sub.d. supra
stig. & 2 subventral rows, ^{the latter smaller} three on joints
3 & 4 being longest as the subdorsal ones
While joint 12 has one long one, dorsal

other shorter ones occur about the
 spiracles and on venter. Body has
 many long dark hair and short
 pale ones. Spiracles on joint 5, 2, 5-12
 yellow & surrounded by a dark
 shade except the one on joint 2.
 Color of body yellow brown, with ^{light brown spiracles}
 a pink shade on dorsum esp. on
 joints 3 & 4. Venter darker. Thorax
 feet & other brownish hairy. Clasper &
 abd. feet ^{coarsely} ~~coarsely~~ black. L. 75 mm.
 An obscure dark dorsal shade
 shows between the segments.
 Another: Central Park, N.Y. Oct 6, '90. Hd high
 than wide, rounded, flattened in front, obso-
 lutely oblique; clypeus small, slightly
 laterally indented. Hd green, dark yellow
 bet the black bands in front. Lateral
 band obsolete for its superior part. Mouth
 parts, the feet, lower part of abd. feet & claws
 & hood & horns to all anal plates dark
 yellow. WHL 87 mm. Body fine deep green
 darker ventrally. Clasper & abd. feet
 black, as are anal plates centrally
 except the granulations. L 70 mm

153

Edema or deciduous oak, Melbourne
 Fla. Dec. 19, '89. Head much larger than
 joint 2, shiny orange red, paler in the
 lower part. A few hair seen by lens.
 Body smooth & shiny with a few short
 hairs. On joint 12 a transverse fold
 forming a hump on dorsum, orange.
 All feet & anal plates also orange
 & subd. & stig. yellow band the
 former partly replaced by white and
 the latter by orange. Body pale
 purplish, 4 narrow slightly wavy
 lines of ground color ^{in s.d. space} bet. s-d lines
 separated by black somewhat inter-
 rupted. ^{in stig. space} Subd. bet. s-d & stig. but
 the black as much broken up &
 replaced by ground color making
 a black line centrally is most distinct
 the lines ^{similar to those in other} ~~are~~ on subventral space ^{on joint}

13 the black is much broken up, the ground color is nearly white and the sub-d. line is obsolete. Venter orange, whitest centrally with a thin black line. L. abd. 25^{mm}
 Nov 21 Dec 21 Same, but ground color is a pale blue, and hump on 12 is darker orange, more like head. Anal feet elevated when not walking. Toward maturity the markings of dorsal space between segs. are obscured by a purplish glaze & d-d. line has little tinge of orange. L. 35^{mm} at maturity 40^{mm}
 The subdorsal line does not go on joint 2. The black of 2-d space is much broken up, giving the appearance of many lines. Larva Dec 30 as in *Edema albipennis*.
 Images Feb 25 '90 cat no 4608

Edema

Copied in common
 larva took 7/24/90

154

Exopisthoda? larva on red-green leaf, Peter Beach, Fla. Dec 21, 1899.

Head irregularly black in front, brownish at the sides & vertex, more

intermediate reddish. Wings as in the arctiids (see 18148) with

the small irregularly shaped segments, brownish with black brownish

ventral line. The sub-stig & sub-ventral line are not distinct. Body

reddish black with a transverse brownish stripe between each

segment. When the body is contracted, the body is con-

tracted. Feet red reddish. Spiracles orange. Body 25^{mm} Subventral

space brownish black brownish. A dorsal line of whitish scales, gold

sub-stig & sub-ventral line. Head of dorsal line in segs. 6

~~I do not have~~
~~last stage &~~
~~but want to see D~~
~~who really killed~~
~~the people~~

classmate

July 2nd 1884

10-11-12

Stack 9/12

100

[Illegible text]

2/10

100

2/2/1944

(Faint, illegible text)

in black ink

153.

1000

1544

10

1997

... ..

2. 2004

1

7

22

are

1998

80 - Live

25A 1st stage? (10) head pale yellow, not shiny, eyes, narrow line above mouth and ends of jaw black. Body yellowish green (transversely annulated head dotted with small pale whitish spots. An obscure white d. band). anal hairy black, $2\frac{1}{2}$ mm long with larva 9 mm + or about five hairs.

[illegible]

Section 3 in 14 feet of ...
... white ...
... black ...

B. B. Egg

The hind feet are less strongly developed than the front ones which give with heavy yellowish round spots separated by

Head yellow, with blue eyes black. Body pale green.
Caudal fin black. 25 mm. x 10 mm. x 10 mm.
Caudal fin black. 25 mm. x 10 mm. x 10 mm.
Caudal fin black. 25 mm. x 10 mm. x 10 mm.
Caudal fin black. 25 mm. x 10 mm. x 10 mm.
Caudal fin black. 25 mm. x 10 mm. x 10 mm.

| | |
|---|-----|
| 1 | .6 |
| 2 | 1.8 |
| 3 | 3 |
| 5 | 5 |

Mon 22 See 26 Head & crown & sides
before but very minutely dotted with

upa Feb 14 of similar shape to pupa of 28164
but much more robust and less highly
marked after the same pattern in
black and red brown. But the black
is very extensive covering nearly the
whole pupa. Color black, very shiny
marked obscurely with red brown on
the veins of the wing cases and on the
leg cases. A curved line at back part
of thorax, and more distinctly with
a wavy narrow band around each
of the anterior abdominal segments.
Body punctured bet. segs. Wing cases ^{8th thorax}
~~absent~~ reduced. Genae of face
somewhat rounding above & below
b-d. broad at base and tapering evenly
to the point; densely punctured.
Length pupa 55 mm. width 13 mm
Insects March 13 Cat no 4646

Dilophosaurus cello
(coll at St Augustine)
(Nat Mus)
(JLS aware)

egg laid
Dec 31, 10:15 a.m.
Hatched Jan 2 8:15 a.m.

156

Pair of 4 eggs laid by Eudamnia proteus
 on back of leaf of yellow over bean
 vine, Palm Beach, Fla. Dec 22, 1889.
 Eggs Irregularly spherical, the upper
 $\frac{3}{4}$ with 11 vertical ridges running
 to an elevated ring that surrounds
 the summit. ~~Color of~~ ^{Pale yellow}
~~up black (mucosa); diam. 9 mm~~
 Hatched Dec 23 Head much larger than
 any other joint, slightly notched at
 summit, dark brownish black. Joint
 2 above unicolorous with head. Body
 yellow, more greenish on dorsum. $\times 2.5$ mm
 when larva had eaten 2 white
 sides of the leaf & built over the
 portion between securing it by threads
 at 4 under this on the upper part.
 Hatched Dec 26 Head & crown much as
 before but very minutely dotted with

yellow. Body greenish yellow, densely covered by small yellow granulations. a dorsal greenish line & subdorsal yellow one, both absent on joint 13.

Built second house Dec 27

Molt Dec 31 Head brown black, roughened with many minute points. Cervical spot as upper half of joint 2. concolorous but smooth. Body yellowish green, thickly dotted with yellow & yellow subdorsal line, but leaving darker dorsal line. Joint 12 tinged with orange, and joint 13 on anal plate unornamented. L. 7 mm

Built third house Jan 1, 1890.

Molt Jan 4 Head dark brown, minutely punctured. A large quadrate orange patch between eyes & jaws connected with shining brown black; the rest of joint orange. Body dark green thickly covered with small yellow spots, but leaving

dark dorsal line and obscure sub-stigmatal. A distinct even yellowish dorsal line & becoming diffuse and orange on joints 12 & 13 and bordering anal plate. Subventral fold pink & very distinct. Ventrals spots. Thorax & legs yellowish. Subdorsal pale orange. Long 8.5 mm. Gonyon 10

Molt Jan 11 Head large, little depressed. Top of vertex sparsely granulated.

Black on joint 2. From above, the quadrate orange red spot before eyes, connected with the shining portion. Joint 2

black above, orange red below. Body orange. Head & joint 13 pale green, thickly covered over dorsum with many small black and yellow spots, only black ones on the space between eyes & jaws. Black dorsal line yellowish band, orange on joint 13 and bordering anal plate. White line on joint 13 in a ventral of spiracles dull pinkish. The feet black. Abdomen not unicolor. 30 mm. Feb 27 in colony of 3 years, held by the spider & finally with silk with thread around it. Cremaster in throat.

157

Egg of *Pieris monista*? on pepper grass
Dec. 23, '89 Egg spindle shape, 9 vertical
ribs, coalescing at summit, yellow.

on upper surface of leaf. Height abt. 1.2 mm
Another got Dec 30, hatched Jan 3.

Head round, pale yellowish between
eyes & mouth brown. Body pale yellow
with fine black hair, longest at
the extremities. Eat egg shell. $2\frac{1}{2}$ mm

Before last moult? Head with many
elevated black spots bearing white hair.
Cervical spot black, bristled, covered by
black conical piliferous tubercles. Body
has dorsal, subd. and stig. yellow
bands; the a-d spaces are yellow green
the stigmatal space pale blue, venter
dull green. Joints 3-13 have a row of large
black elevated spots in a-d space, and
a similar row in upper part of stig. space

doubled in joints 3 & 4. These bear each
a short black hair. Body is covered by
numerous small piliferous black dots.
Spine black. Length 18 mm

Moult Jan 12 Head dull yellow, a
brighter patch before the eyes. Covered by
very elevated black spots bearing hair.
Thoracic feet tipped with black. Spots
in rows are conical tubercles. Otherwise
same as preceding. Length 25 mm

Suspended Jan 15 (Pupa smashed)

Probably *Pieris monista*

BB154 chuk

♀ BB154 out Feb 4 '90 mated night of Feb 4-5, laid eggs evening Feb 6 about 400 (in acc 22/4) finished night 10-11

Eggs nearly spherical, base a little flattened, minutely punctured. Color yellowish pearly gray. Diam. 8 mm

Hatched Feb 18 Head light brown, paler infra. Eyes large black. Warts 5 mm Body pale whitish except joints 5, 6, 9, 10 & 11

which are light brown. Warts concolorous, hair black. Length 2 mm

out Feb 23 Head nearly colorless, tinged with brown. Eyes large black. Warts brown. Body same as head but not shiny, tinged with reddish brown. Warts 10 from joint 5, 6, 9, 10 & 11 black. Hair black. Length 3 mm

Later body more brownish, blackish around black warts. Paler dorsal line.

Born Feb 26 Head .8 mm .9 mm semi-transparent pale brownish, a

translucent eyes black. Cervical spot, 2 legs same color. Body light reddish brown. Dorsal white in j 4,

joints 5 & 6 all around & 8, 9, 10 & 11 in s-d space

black. A white dorsal line, hair bristly black. L 5 mm

Molt (2 weeks) Head 1.2 mm .13 mm pale brownish shiny. Warts pale

lips black. Body red orange. Joints 5, 6 and 9, 10 & 11 black (latter s-d & 8)

out of the warts black. Dorsal line slightly paler than body

hair black, bristly. Length 9 mm - 15 mm

Molt week 7 Hd 2 mm = A nearly. Length 18 mm Hair

appears pale on dorsum on joints 7, 8, 9.

(dead)

The supposed ♂ pupa came out ♀

and this description needs

more observations.

darken chuk at vertex

Saw *D. chamcaenerii* in Devin cot.
July 23, '89

